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in the following listed application(s) or patent(s) for which the issue fee has been paid.

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(12) **United States Patent**
Takahashi

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(54) **LIGHT EMITTING DEVICE HAVING
TRANSPARENT FILM VARYING
REFRACTIVE INDEX AND
MANUFACTURING METHOD THEREOF**

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H05B 33/00 (2006.01)
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428/690; 428/917; 257/100

(58) **Field of Classification Search** 313/506
See application file for complete search history.

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(57) **ABSTRACT**

A method for manufacturing a light emitting device with higher light extraction efficiency, lower consumption, longer operation life, and higher reliability can be provided. The light emitting device of the present invention comprises a substrate having an insulating surface, a transparent film formed over the substrate having the insulating surface, a first electrode formed over the transparent film, a layer including an organic compound formed over the first electrode, and a second electrode formed over the layer including the organic compound, wherein the refractive index of the transparent film sequentially varies from an interface at the side of the substrate having the insulating surface to an interface at the side of the first electrode.

18 Claims, 11 Drawing Sheets

